

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-6 (canceled)

Claim 7 (currently amended): A device for protecting an electronic module (μ C, C-T, T2) disposed in a control device (ST) in a multi-voltage on-board electrical system (12V/42V) having an accumulator (BAT1) with a low on-board electrical system voltage (Vbat1) against short circuiting to a high on-board electrical system voltage, comprising:

a MOSFET transistor (T1) having a drain source path (D-S) inserted between a control device connection (A, A1, A2) and a connection (E, E1, E2) of the electronic module (μ C, C-T, T2), and with:

a source (S) connected to the connection (E, E1, E2) of the electronic module (μ C, C-T, T2);

a drain (D) connected to the control device connection (A, A1, A2); and

a gate (G);

a Zener diode (D1) connected between said gate (G) and said source (S) of said MOSFET transistor (T1);

a gate resistor (R_V) connected between said gate (G) of said MOSFET transistor (T_1) and a positive pole ($+V_{bat1}$) of the first accumulator (BAT_1); and

a diode (D_2) connected in parallel with said gate resistor (R_V), for conducting current in a direction from said gate (G) to the positive pole ($+V_{bat1}$) of the accumulator (BAT_1);

wherein when a short circuit to the high on board electrical system voltage is conducted to said drain, said MOSFET transistor turns on or remains turned on.

Claim 8 (currently amended): The device according to claim 7, wherein said electronic module is disposed in control device (ST) for controlling low-power consumers or for processing/transmitting data.

Claim 9 (currently amended): The device according to claim 7, wherein said Zener diode (D_1) is configured with a breakdown voltage (V_Z) lower than a maximum permitted gate source voltage (V_{gs}) of said MOSFET transistor (T_1).

Claim 10 (currently amended): The device according to claim 7, wherein said MOSFET transistor (T_1) has a threshold voltage (V_{th}) and, in an event of a short circuit to a highest voltage of the on-board electrical system active at the device connection (A, A_1, A_2), a source voltage (V_e) of said transistor (T_1) is limited to a value $V_s = V_{bat1} - V_{th}$, where V_s is the source voltage, V_{bat1} is

the low on-board voltage (V_{bat1}), and V_{th} is the threshold voltage of said transistor ($T1$).

Claim 11 (currently amended). The device according to claim 7, wherein, on occurrence of a short circuit to a highest voltage of the on-board electrical system active at the device connection ($A, A1, A2$), said diode ($D2$) connected in parallel to said gate resistor (Rg) limits the gate voltage (Vg) of said MOSFET transistor ($T1$) to a value $Vg = V_{bat1} + Vd$, wherein Vg is the gate voltage, V_{bat1} is the low on-board voltage (V_{bat1}), and Vd is a conducting state voltage (Vd) of said diode ($D2$).

Claim 12 (currently amended): The device according to claim 7, with the protective circuit (Ss, Ssa, Ssb) integrated in an ASIC.

Claim 13 (original): The device according to claim 7, wherein the multi-voltage on-board electrical system is a motor vehicle on-board electrical system.